

**ATTORNEY DOCKET NO. 21085.0044U3**  
**International Application No. PCT/US04/01298**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (Original) A method of increasing cytosolic  $\text{Ca}^{2+}$  levels in an airway epithelial cell comprising contacting P2X receptors on the cell with an effective amount of  $\text{Zn}^{2+}$ .
2. (Original) The method of claim 1, wherein the P2X receptors are not contacted with zincum gluconium.
3. (Original) The method of claim 1, wherein the  $\text{Zn}^{2+}$  is in the form of zinc chloride.
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Original) The method of claim 1, further comprising
  - (a) contacting the cell with an effective amount of ATP,
  - (b) reducing the cell's extracellular  $\text{Na}^+$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with low  $\text{Na}^+$ ,
  - (c) alkalizing the cell's extracellular fluid or contacting the cell with an alkaline solution containing  $\text{Zn}^+$ ,
  - (d) reducing the cell's extracellular  $\text{Mg}^{2+}$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with low  $\text{Mg}^{2+}$ ,
  - (e) increasing the cell's extracellular  $\text{Ca}^{2+}$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with high  $\text{Ca}^{2+}$ , or
  - (f) any combination of steps a-e.

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13. (Original) A method of treating an airway disease in a subject, comprising contacting epithelial cells in the trachea, bronchi, bronchioles, or alveoli of a subject with an effective amount of  $\text{Zn}^{2+}$ .
14. (Canceled)
15. (Canceled)
16. (Canceled)
17. (Canceled)
18. (Canceled)
19. (Canceled)
20. (Canceled)
21. (Original) The method of claim 13, further comprising
- (a) contacting the cell with an effective amount of ATP,
  - (b) reducing the cell's extracellular  $\text{Na}^+$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with low  $\text{Na}^+$ ,
  - (c) alkalinizing the cell's extracellular fluid or contacting the cell with an alkaline solution containing  $\text{Zn}^+$ ,
  - (d) reducing the cell's extracellular  $\text{Mg}^{2+}$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with low  $\text{Mg}^{2+}$ ,
  - (e) increasing the cell's extracellular  $\text{Ca}^{2+}$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with high  $\text{Ca}^{2+}$ , or
  - (f) any combination of steps a-e.
22. (Original) The method of claim 13, wherein the contacting step is performed with an  $\text{Zn}^{2+}$ -containing inhalant, nebulization, aerosol, or instillant.
23. (Original) The method of claim 13, wherein the zinc is in the form of zinc chloride ( $\text{ZnCl}_2$ ).
24. (Canceled)
25. (Canceled)
26. (Canceled)

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27. (Canceled)
28. (Canceled)
29. (Canceled)
30. (Canceled)
31. (Canceled)
32. (Canceled)
33. (Canceled)
34. (Original) The method of claim 24, further comprising
- (a) contacting the cell with an effective amount of ATP,
  - (b) reducing the cell's extracellular  $\text{Na}^+$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with low  $\text{Na}^+$ ,
  - (c) alkalizing the cell's extracellular fluid or contacting the cell with an alkaline solution containing  $\text{Zn}^+$ ,
  - (d) reducing the cell's extracellular  $\text{Mg}^{2+}$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with low  $\text{Mg}^{2+}$ ,
  - (e) increasing the cell's extracellular  $\text{Ca}^{2+}$  or contacting the cell with a  $\text{Zn}^{2+}$  containing solution with high  $\text{Ca}^{2+}$ , or
  - (f) any combination of steps a-e.
35. (Canceled)
36. (Canceled)
37. (Original) A composition comprising zinc and a saline solution, wherein the saline solution has low  $\text{Na}^+$ , is enriched with  $\text{Ca}^{2+}$ , and is modified to an alkaline pH.
38. (Currently Amended) A nasal spray, nebulizer, or aerosol inhaler comprising the composition of claim 37.
39. (Canceled)
40. (Canceled)
41. (Original) The composition of claim 37, wherein the zinc is not in the form of zincum gluconium.

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42. (Original) A method of treating a bacterial infection in a subject, comprising administering to the subject the composition of claim 37.
43. (Original) A method of reducing inflammation in a subject, comprising administering to the subject the composition of claim 37.
44. (Original) A method of treating polycystic kidney disease in a subject, comprising administering to the subject the composition of claim 37.
45. (Original) A method of treating a subject with an endocrine disorder, comprising administering to the subject the composition of claim 37.
46. (Canceled)
47. (Canceled)
48. (Original) A method of screening for an airway epithelial  $\text{Ca}^{2+}$  entry channel agonist, comprising
- (a) contacting an airway epithelial cell with a test compound;
  - (b) detecting calcium levels in the airway epithelial cell; and
  - (c) screening for a sustained elevation in calcium as compared to a control level, indicating an airway epithelial  $\text{Ca}^{2+}$  entry channel agonist.
49. (Original) The method of claim 48, wherein the  $\text{Ca}^{2+}$  entry channel is selected from the group consisting of a P2X purinergic receptor  $\text{Ca}^{2+}$  entry channel, a transient receptor potential (TRP)  $\text{Ca}^{2+}$  entry channel, a store-operated  $\text{Ca}^{2+}$  (SOC) entry channel, a calcium release activated channel (ICRAC), and a CAT-1  $\text{Ca}^{2+}$  entry channel.
50. (Original) The method of claim 48, further comprising the step of:
- (d) screening for reversibility of response by removing the agonist during the assay.
51. (Original) The method of claim 50, further comprising the step of:
- (e) screening for dependence upon extracellular  $\text{Ca}^{2+}$  by repeating the assay in a solution devoid of extracellular  $\text{Ca}^{2+}$ .
52. (Original) The method of claim 48, wherein the airway epithelial cell is a cystic fibrosis airway epithelial cell.

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- 53. (Canceled)
- 54. (Canceled)
- 55. (Canceled)
- 56. (Canceled)
- 57. (Canceled)
- 58. (Original) The method of claim 48, wherein the airway epithelial cell is in a solution containing an effective amount of ATP.
- 59. (Canceled)
- 60. (Canceled)
- 61. (Original) The method of claim 48, wherein the airway epithelial cell is in a solution containing an effective amount of zinc.
- 62. (Canceled)
- 63. (Canceled)
- 64. (Original) The method of claim 48, wherein the airway epithelial cell is in an alkaline solution.
- 65. (Canceled)
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